

EXECUTIVE MBA (EXMBA)

Term-End Examination

June, 2012

00173

MCT-053 : QUANTITATIVE TECHNIQUES

Time : 3 hours

Maximum Marks : 100

Note : Answer any five questions. All questions carry equal marks.

1. (a) Statistics play an important role not only in the study of Economics and Commerce, but also in managerial decision making. Explain briefly. 10
- (b) Describe the different measures of central tendency of a frequency distribution, mentioning their merits and demerits. 10
2. (a) Find the 4th decile and 60th percentile for the following distribution : 10

Marks	0 - 4	4 - 8	8 - 12	12 - 14	14 - 18	18 - 20	20 - 25	25 Above
No. of students	10	12	18	7	5	8	4	6

- (b) Find the curve of best fit of the type $y=ae^{bx}$ 10
to the following data by applying the method of least squares :

$x :$	1	5	7	9	12
$y :$	10	15	12	15	21

3. (a) Distinguish between : 10
(i) Quartile Deviation and mean Deviation.
(ii) Variance and Coefficient of Dispersion.
- (b) The mean and the standard deviation of a characteristic of 100 items were found to be 60 and 10 respectively. At the time of calculations, two items were wrongly taken as 5 and 45 instead of 30 and 20. Calculate the corrected mean and corrected standard deviation. 10
4. (a) What is Fisher's ideal index number ? Why is it so called ? Also Explain time reversal test. 10
- (b) Construct index number for 2000 taking 1998 as the base year from the following data by using average for price relative method. 10

Commodities		A	B	C	D	E
Price in (Rs.)	1998	100	80	160	220	40
	2000	140	120	180	240	40

5. (a) Define the following terms as used in probability theory. 10
- (i) Trial and event
 - (ii) Mutually exclusive events
- (b) An insurance company sells a life insurance policy with a face value of Rs.1000 and a yearly premium of Rs. 20. If 0.2% of the policy holders can be expected to die in the course of a year, What would be the company's expected earning per policy holder in any year ? 10
6. (a) If mean and variance of a binomial distribution are 4 and 2 respectively. Find the probability of 10
- (i) Exactly two success.
 - (ii) Less than two success
- (b) Define exponential distribution. Also find the distribution function, mean and variance for the exponential distribution. 10
7. (a) After correcting 50 pages of the proof of a book, the proof reader finds that there are on the average, 2 errors per 5 pages. How many pages would one expect to find with 0,1,2,3,4 errors in 1000 pages of the first print of the book ($e^{-0.4} = 0.6703$). 10

(b) Students of a class were given a Quantitative Techniques test. There marks were found to be normally distributed with mean 60 and standard deviation 5. What percentage of students scored. **10**

(i) More than 60 marks

(ii) Less than 56 marks

8. (a) Ten competitors in a beauty contest were ranked by three judges in the following orders : **10**

First Judge :	1	6	5	10	3	2	4	9	7	8
Second Judge :	3	5	8	4	7	10	2	1	6	9
Third Judge :	6	4	9	8	1	2	3	10	5	7

Use the method of rank Correlation to determine which pair of judges has the nearest approach to common taste in beauty ?

(b) What do you mean by multiple regression and discuss its utility in statistical analysis. **10**
